

### Claim Amendments

1. (Currently amended.) A surgical kit for hemiarthroplasty of a hip replacement joint comprising:
  - a prosthetic femoral head and a reamer,
  - said reamer being adapted to ream a socket into an acetabulum until the cancellous bone is exposed,
  - the femoral head having a ~~size and shape~~ radius of curvature determined with reference to the weight of the patient for whom the surgical kit is intended and complementary to the reamer such that the femoral head can be fitted closely and directly into a reamed acetabulum ~~whereby~~ in order that liquid between the femoral head and the socket will be subjected to a hydrostatic pressure in the range of 0.01-5Mpa, effective for stimulating the formation of new cartilage between the socket and the femoral head.
2. (Original.) A surgical kit according to Claim 1, wherein the hydrostatic pressure is in the range 0.5-2MPa.
3. (Original.) A surgical kit according to Claim 2, wherein the hydrostatic pressure is 2MPa.
4. (Currently amended.) A surgical kit according to Claim 1 wherein a membrane is provided on the surface of the femoral head or the reamed acetabulum which in use spaces apart the surface of the femoral head and the reamed acetabulum.
5. (Currently amended.) A surgical kit according to Claim 1, wherein multiple spacers are provided on the surface of the femoral head or the reamed acetabulum which in use space apart the surface of the femoral head and the reamed acetabulum.
6. (Previously presented.) A surgical kit according to Claim 4, wherein the membrane is of resorbable material.
7. (Previously presented.) A surgical kit according to Claim 5, wherein the multiple spacers are of resorbable material.

8. (Currently amended.) A surgical kit according to Claim 4, wherein the kit has a continuous/contiguous membrane [[with]] which conforms to the shape of the surface of the femoral head and the reamed acetabulum.
9. (Previously presented.) A surgical kit as claimed in Claim 4, wherein the kit has a membrane that is composed of a gel/hydrogel.
10. (Previously presented.) A surgical kit as claimed in Claim 9, wherein the gel/hydrogel has fibrous materials therein for reinforcement.
11. (Currently amended.) A surgical kit as claimed in Claim 4, wherein the kit has a membrane that comprises material selected from: ~~cellulose~~ cellulose nitrate, expanded PTFE, dacron, alginate and glycolic acid-lactic acid complex (PLGA); polyurethane; collagen mesh or gel; fibronectin; and polyfumarate.
12. (Previously presented.) A surgical kit according to claim 1, wherein the surface of the femoral head is formed from a material adapted to deform and so sustain the hydrostatic pressure.
13. (Currently amended.) A surgical kit as claimed in [[Claim]] claim 5 , wherein the kit comprises multiple spacers and a membrane and the membrane is less rigid than the spacers.
14. (Previously presented.) A surgical kit according to claim 4 wherein the membrane is adapted to deliver growth factors, stem cells, chondrocytes or fibroblasts to the liquid.
15. (Previously presented.) A surgical kit according to claim 5 wherein the spacers are adapted to deliver growth factors, stem cells, chondrocytes or fibroblasts to the liquid
16. (Previously presented.) A surgical kit as claimed in Claim 14, wherein said membrane is porous or permeable.

17. (Previously presented.) A surgical kit as claimed in Claim 15, wherein said spacers are porous or permeable.
18. (Previously presented.) A surgical kit according to claim 1, wherein the size (radius of curvature) of the reamer (ie cutting envelope of the reamer) is at most approximately 5mm greater than that of the femoral head so that the clearance between the femoral head and acetabulum is 5mm or less.
19. (Previously presented.) A surgical kit comprising a reamer wherein the reamer is a modular shell reamer for joint refurbishment of a ball and socket anatomical joint such as a hip joint, having a shaft and a substantially part-spherical head separable from the shaft but capable of being securely coupled to the shaft in situ for use, the reamer head having reamer cutting teeth facing not only outwardly toward the socket surface in use but also inwardly toward the ball surface.
20. (Currently amended.) A surgical kit for hemiarthroplasty of a hip replacement joint comprising:  
a prosthetic femoral head and a reamer,  
said reamer being adapted to ream a socket into an acetabulum until the cancellous bone is exposed,  
the femoral head having a size and shape complementary to the reamer such that the femoral head can be fitted closely and directly into a reamed acetabulum, the size (radius of curvature) of the reamer (ie cutting envelope of the reamer) being at most approximately 5mm greater than that of the femoral head so that the clearance between the femoral head and the reamed acetabulum is 5mm or less.
21. (Currently amended.) A surgical kit according to Claim 20, wherein a membrane is provided on the surface of the femoral head or the reamed acetabulum which in use spaces apart the surface of the femoral head and the reamed acetabulum.
22. (Currently amended.) A surgical kit according to Claim 20, wherein multiple spacers are provided on the surface of the femoral head or the reamed acetabulum which in use space apart the surface of the femoral head and the reamed acetabulum.

23. (Currently amended.) A surgical kit according to Claim [[20]] 21, wherein the membrane is of resorbable material.
24. (Currently amended) A surgical kit according to Claim [[20]] 22, wherein the multiple spacers are of resorbable material.
25. (Previously presented.) A surgical kit according to Claim 20, wherein the kit has a continuous/contiguous membrane with conforms to the shape of the surface of the femoral head and the reamed acetabulum.
26. (Previously presented.) A surgical kit as claimed in Claim 20, wherein the surface of the femoral head is formed from a material adapted to deform and so sustain the hydrostatic pressure.
27. (Currently amended.) A surgical kit as claimed in Claim [[20]] 22, wherein the kit comprises multiple spacers and a membrane and the membrane is less rigid than the spacers.
28. (Currently amended.) A method for hemiarthroplasty of a hip joint comprising providing a prosthetic femoral head and a reamer, and using the reamer to ream a socket into an acetabulum until the cancellous bone is exposed, the femoral head having a size and shape closely complementary to the reamer, and fitting the femoral head directly into the reamed acetabulum, the configuration being femoral head having a radius of curvature determined with reference to the weight of the patient for whom the surgical kit is intended such that liquid between the femoral head and the socket will be subjected to a hydrostatic pressure in the range of ~~0.01-5MP~~ 0.01-5MPa to stimulate formation of new cartilage between the bone and femoral head.
29. (Previously presented.) A minimally-invasive reaming procedure for joint refurbishment of a ball and socket anatomical joint such a hip joint, comprising forming an access tunnel through the ball part of the joint, providing a modular shell reamer having a separable substantially part-spherical head and a shaft , and introducing the shaft of the reamer through the tunnel, introducing the reamer head separately and coupling the inserted end of the reamer shaft to the reamer head in situ, the reamer head, having reamer cutting teeth facing not only outwardly toward the socket surface

but also inwardly toward the ball surface, and manipulating the reamer to ream both the socket surface and the ball surface.

30. (Previously presented.) A modular shell reamer for joint refurbishment of a ball and socket anatomical joint such as a hip joint, having a shaft and a substantially part-spherical head separable from the shaft but capable of being securely coupled to the shaft in situ for use, the reamer head having reamer cutting teeth facing not only outwardly toward the socket surface in use but also inwardly toward the ball surface

31. (Currently amended.) A method of making a surgical kit for hip replacement, the kit being as claimed in claim 1, the method comprising:

determining the weight of the patient whose hip is to be replaced and estimating the contact area of the patient's hip joint required to ensure a hydrostatic pressure within the hip joint in the range of ~~0.01-5Mpa~~ and 0.01-5MPa;

providing a ~~prosthetic femoral head and a reamer, the reamer~~ [[being]] adapted to ream a socket into an acetabulum until the cancellous bone is exposed~~[[, the]] and a femoral head having a size and shape complementary to the reamer~~; and

~~selected to ensure the required~~ and selecting the contact area between the reamer and the femoral head such that the femoral head can be fitted closely and directly into a reamed acetabulum of the patient's hip joint ~~whereby~~ in order that liquid between the femoral head and the socket will be subjected to a hydrostatic pressure in the range of 0.01-5MPa, effective in use to stimulate the formation of new cartilage between the femoral head and the socket.

32. (Currently amended.) A surgical kit for hemiarthroplasty of a hip replacement joint comprising a reamer, said reamer being adapted to ream a socket into an acetabulum until the cancellous bone is exposed, the size (radius of curvature) of the reamer (ie cutting envelope of the reamer) being at most approximately 5mm greater than that of a femoral head of a patient on whom the reamer is to be used so that the clearance between the femoral head and acetabulum is 5mm or less.

33. (Currently amended.) A surgical kit according to Claim 32, wherein a membrane is provided on the surface of the femoral head or the reamed acetabulum which in use spaces apart the surface of the femoral head and the reamed acetabulum.

34. (Currently amended.) A surgical kit according to Claim 32, wherein multiple spacers are provided on the surface of the femoral head or the reamed acetabulum which in use space apart the surface of the femoral head and the reamed acetabulum.

35. (New.) A method for hemiarthroplasty of a hip joint as claimed in Claim 28, wherein the size (radius of curvature) of the reamer (ie cutting envelope of the reamer) is at most approximately 5mm greater than that of the femoral head so that clearance between the femoral head and reamed acetabulum is 5mm or less.